BEHAVIOR AND CONDITION RESPONSES OF YOUNG-OF-THE-YEAR BLUEFISH (*POMATOMUS SALTATRIX*) TO CONTAMINANTS ACCUMULATED VIA EXPERIMENTAL TROPHIC TRANSFER

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Newly recruited young-of-the-year (YOY) bluefish, *Pomatomus saltatrix*, from relatively pristine Great Bay were fed daily to satiation for about three months with menhaden and mummichog from Great Bay (control treatment) and Hackensack River (exposed treatment). Amount of prey consumed and consumption rates for the exposed fish was significantly less than that for the control fish. Exposed fish also displayed a significant decrease in the swimming activity compared to the control fish during the non-feeding periods. There was no statistical difference in the condition index, but both the length and weight of the control fish were significantly larger. PCB concentrations in exposed YOY bluefish were greater than the field-caught specimens. PCB fingerprints in the exposed fish were nearly identical in the individual YOY bluefish. These fingerprints matched most closely to that of mummichog probably because this was the sole prey species used during the last month of the feeding experiment. PCB concentrations in menhaden and mummichog found in the bluefish guts were higher than the field-caught specimens. As certain PCB congeners can exert adverse neurotoxic, endocrine, or immunological effects, prey with higher PCB body burdens may become less agile and thus easier to capture. If it is assumed that YOY bluefish preferentially foraged on such prey species due to higher capture success, greater amounts of PCBs can be trophically transferred. Decreased feeding, activity level and growth in the exposed YOY bluefish observed in the present study can have detrimental effects on migration fitness and recruitment success in feral populations exposed to similarly contaminated regimes. Further research is being conducted to investigate the physiological and biochemical changes resulting from contaminant exposure that may have caused the changes observed in the behavior and growth of YOY bluefish.

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